

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/012219

A. CLASSIFICATION OF SUBJECT MATTER
Int.Cl⁷ C01B31/12, H01G9/058, H01B1/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C01B31/12, H01G9/058, H01B1/12Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2004
Kokai Jitsuyo Shinan Koho 1971-2004 Toroku Jitsuyo Shinan Koho 1994-2004Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
CA (STN)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2002-173689 A (Osaka Gas Co., Ltd.), 21 June, 2002 (21.06.02), Claims; Par. Nos. [0013] to [0014], [0017] to [0032], [0045] (Family: none)	1-13
X	JP 2001-274044 A (Osaka Gas Co., Ltd.), 05 October, 2001 (05.10.01), Claims; Par. Nos. [0024], [0032] to [0040], [0061] (Family: none)	1-7, 10-13
X	JP 2001-266640 A (Osaka Gas Co., Ltd.), 28 September, 2001 (28.09.01), Claims; Par. Nos. [0014], [0020], [0030], [0043] (Family: none)	1-7, 10-13

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A" document defining the general state of the art which is not considered to be of particular relevance	
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	
"P" document published prior to the international filing date but later than the priority date claimed	"&" document member of the same patent family

Date of the actual completion of the international search
16 November, 2004 (16.11.04)Date of mailing of the international search report
30 November, 2004 (22.11.04)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 51-62196 A (North America Carbon Inc.), 29 May, 1976 (29.05.76), Claim 1; page 2, lower left column, line 11 to page 3, upper right column, line 8; example 5 & US 3864277 A & BE 823423 A & DE 2453325 A & FR 2994130 A & GB 1467496 A & CA 1024972 A	8, 9
Y	JP 7-155608 A (Mitsubishi Gas Chemical Co., Inc.), 20 June, 1995 (20.06.95), Claims 1 to 3 (Family: none)	8, 9
A	JP 3-242310 A (Tadakazu HIRAYAMA et al.), 29 October, 1991 (29.10.91), Claim 2 (Family: none)	1-13
P, A	WO 03/087262 A1 (Osaka Gas Co., Ltd.), 23 October, 2003 (23.10.03), Claims (Family: none)	1-13